

PLEASE AMEND THE CLAIMS AS FOLLOWS:

23. (Twice Amended) A calcination plant for a particulate feed material comprising:

a substantially vertical calcination reactor having a bottom portion;

means for effecting transport of the particulate feed material through said calcination reactor along a substantially cyclonic flow path; and

[means] a burner for creating a [heat source within] flame exposed to the interior of said cyclonic flow path, said effecting means comprising means for introducing the particulate material into said calcination reactor substantially tangentially of said bottom portion, and said cyclonic flow path extending upwards from said bottom portion, said [creating means] burner being mounted in said bottom portion.

24. (canceled)

52. The plant of claim 23, wherein said burner is mounted vertically and is designed to create an upward flame.